

Claims

1. A multimodal polyethylene polymer comprising a low molecular weight ethylene homo-polymer fraction and a high molecular weight ethylene copolymer fraction, characterised in that:
 - the low molecular weight fraction is present in an amount of 45 to 55% by weight;
 - the high molecular weight fraction is present in an amount of 45 to 55% by weight;
 - the multimodal polymer has a MFR₅ of greater than 0.10 g/10 min; and less than or equal to 0.22 g/10 min; and
 - the multimodal polymer has a density of greater than or equal to 952 kg/m³.
2. A multimodal polyethylene polymer according to claim 1 wherein the low molecular weight fraction is present in an amount of 47 to 52% and the high molecular weight fraction in an amount of 48 to 53%.
3. A multimodal polyethylene polymer according to any one of the preceding claims wherein the polymer has a density of greater than or equal to 953 kg/m³.
4. A multimodal polyethylene polymer according to any one of the preceding claims wherein the polymer has a dynamic viscosity, at a shear stress of 2.7 kPa, of at least 300000 Pa·s, preferably 350000 Pa·s.

5. A multimodal polyethylene polymer according to any one of the preceding claims wherein the polymer has a shear thinning index of 70 or greater, preferably 100 or greater.
6. A multimodal polyethylene polymer according to any one of the preceding claims wherein the co-monomer of the high molecular weight ethylene copolymer is a C₆ to C₁₂ alpha-olefin.
7. A multimodal polyethylene polymer according to claim 6 wherein the co-monomer is a C₈ to C₁₀ alpha-olefin.
8. A multimodal polyethylene polymer according to any of the preceding claims, wherein the ethylene homo-polymer has a MFR₂ of about 300 to 2000 g/10 min.
9. Use of a polymer composition comprising a multimodal polyethylene polymer according to any of claims 1 to 8 in the production of a pipe.
10. A pipe produced using a multimodal polyethylene polymer composition according to any one of claims 1 to 8.